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Krishnamoorthy et al.

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(54) **SCORE AND SUGGESTION GENERATION FOR A JOB SEEKER WHERE THE SCORE INCLUDES AN ESTIMATED DURATION UNTIL THE JOB SEEKER RECEIVES A JOB OFFER**

(71) Applicant: **LinkedIn Corporation**, Mountain View, CA (US)

(72) Inventors: **Prabhakaran Krishnamoorthy**, Bangalore (IN); **Uday Sankar Sen**, Bangalore (IN)

(73) Assignee: **LinkedIn Corporation**, Mountain View, CA (US)

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(51) **Int. Cl.**

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G06Q 10/10	(2012.01)
G06Q 10/06	(2012.01)
G06Q 30/02	(2012.01)
G06Q 50/00	(2012.01)

(52) **U.S. Cl.**

CPC ***G06Q 10/1053*** (2013.01); ***G06Q 10/063112*** (2013.01); ***G06Q 30/02*** (2013.01); ***G06Q 30/0282*** (2013.01); ***G06Q 50/01*** (2013.01)

(58) **Field of Classification Search**

CPC G06Q 10/063112; H04L 67/306
USPC 706/125, 45, 62
See application file for complete search history.

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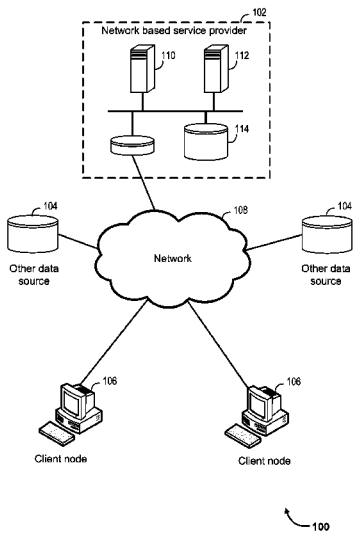
Primary Examiner — David Vincent

(74) *Attorney, Agent, or Firm* — Hickman Palermo Becker Bingham LLP

(57) **ABSTRACT**

Methods, systems and computer program products are provided for generating a feasibility score for a job search and for generating a suggestion for enhancing the score. In one method, one or more computing devices receive, over a network, a data object that is associated with a user who is engaged in a search for employment. The data object includes a résumé of the user and a requirement that is associated with the search. The computers calculate, based on the data object, a score that indicates a likelihood of receiving an offer for an employment position that satisfies the requirement. The computers generate a suggestion that identifies how the score may be increased. The computers send the suggestion over the network to a computing device of the user.

20 Claims, 8 Drawing Sheets



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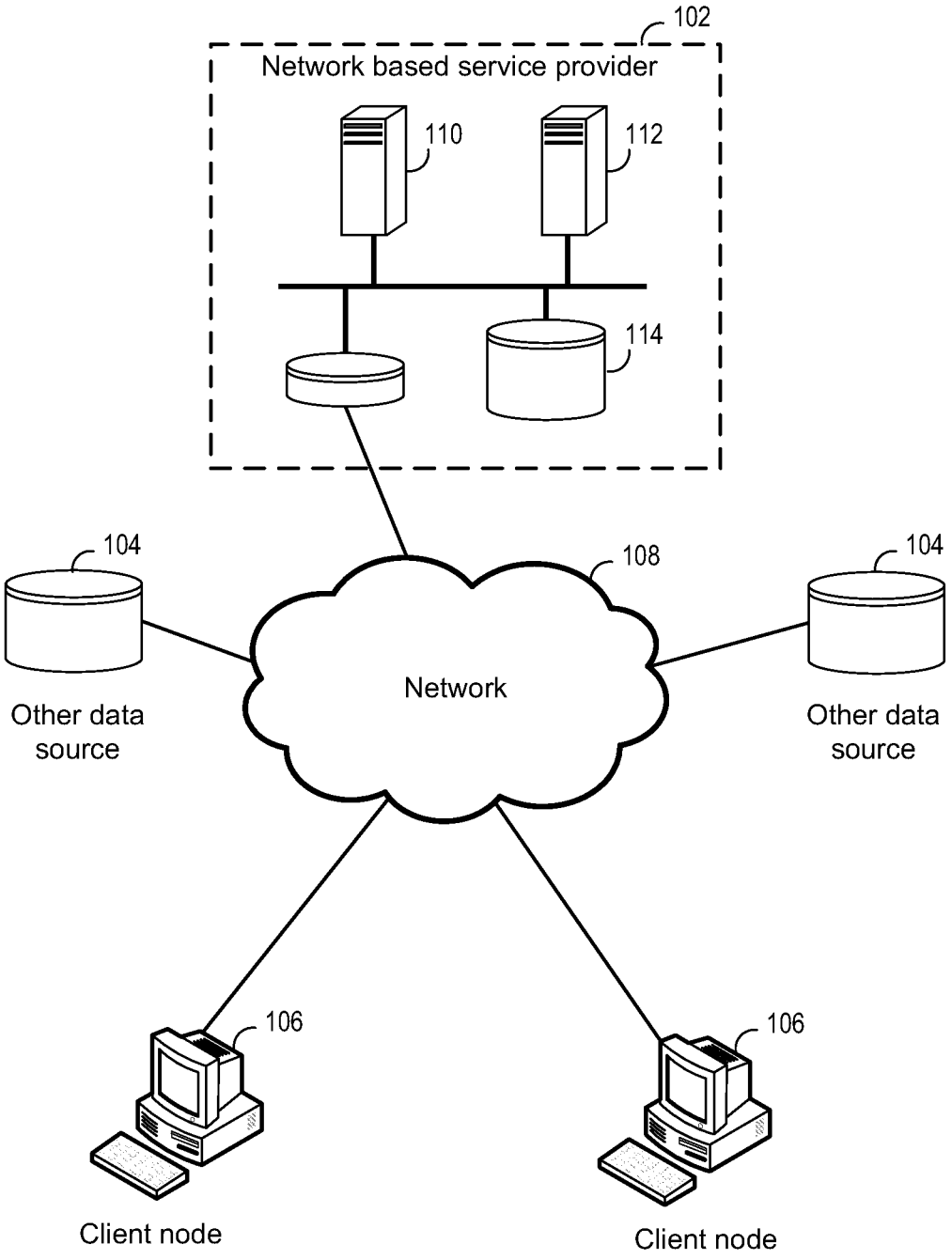
102
Network based service provider
110
112
114
104
108
104
Other data source
Network
Other data source
106
106
Client node
Client node
100

FIG. 1

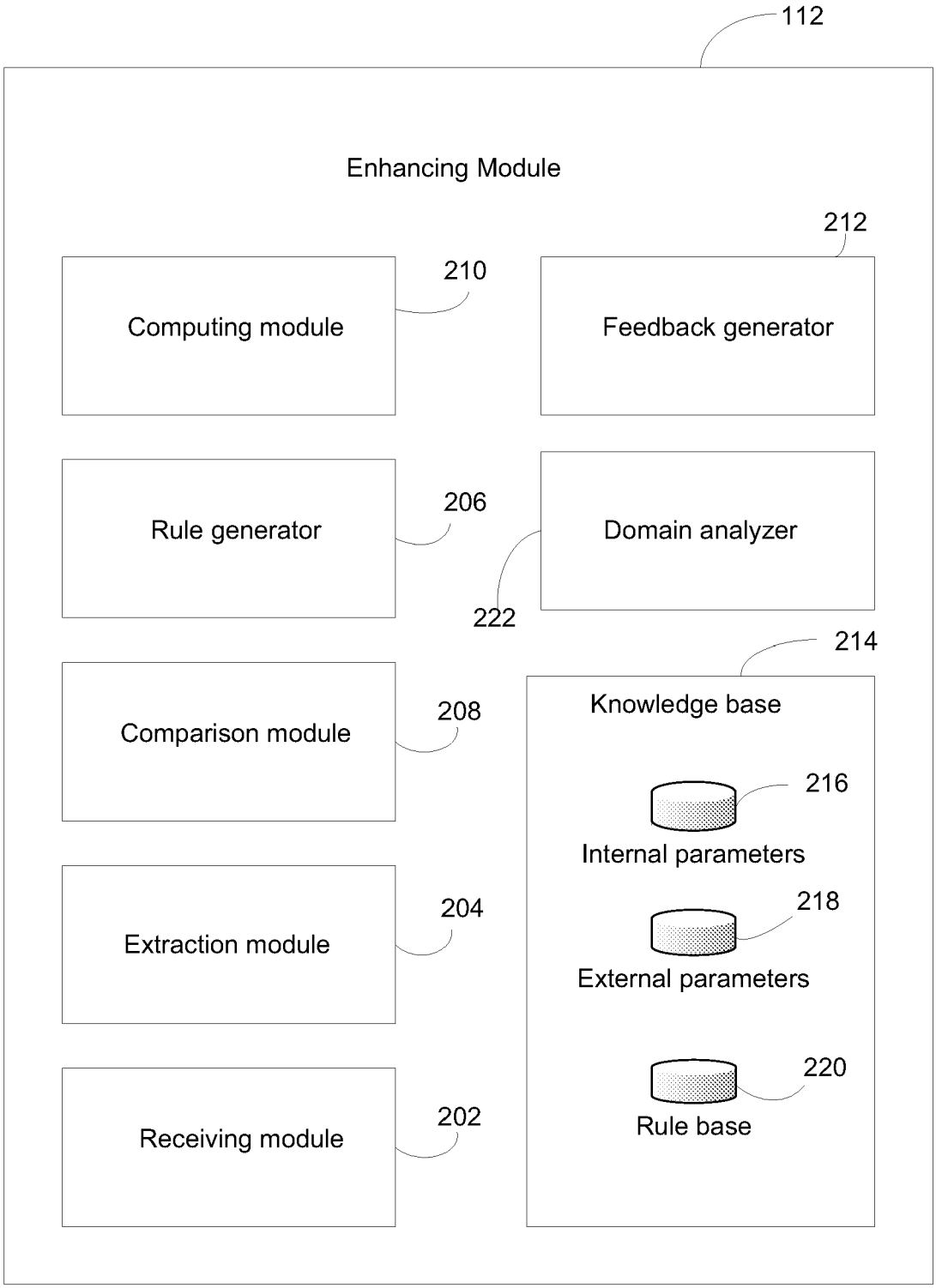
112
Enhancing Module
212
210
Computing module
Feedback generator
206
Rule generator
Domain analyzer
222
214
Knowledge base
208
Comparison module
216
Internal parameters
218
204
Extraction module
External parameters
220
Rule base
202
Receiving module

FIG. 2

Personal Details
Name: XYZ
Age: 30 years

Contact Details
Address: 9, Bella Vista Apt., 66th street, CA 96140.
Email: xyz@yahoo.com

Expected Position
Senior IT programming engineer

Preferences
Preferred company: ABX Corporation
Salary: Above $100,000 per annum
Location: California
Mode: Full time

Educational Qualifications
From Sept. 2000 to Apr. 2003, I got master degree from Texas A&M University in computer software engineering.
From Sept. 1996 to July 2000, I got bachelor degree from School of ABC and major in Computer Science and Technology.

Skill set
Languages known: C, C++, Java, C#, PERL
Operating system: Linux, Unix, Windows
Platforms: .NET
Web Designing: XML, Ajax, RSS
Databases: Oracle

Additional Professional Courses
Course on Computer Networking in June 2005 from CIFL Institute, New York.
Course on Advance Database Management in December 2007 fro TJ Institute, New Jersey.

Work Experience
Currently working as a Senior Programming Expert since the last 5 years at JMT Company of America
I have handled a wide variety of projects, such as Applications and System design related to Human Face Recognition, Virtual Reality and Augmented Reality Gaming

Recommendations
Mr. J Smith
Director, JMT Company of America

Self Rating
Above Average

300

FIG. 3A

INTERNAL PARAMETERS	
Requirement	IT engineering, senior position
Restrictions	ABX Corporation, Above $100,000 per annum, California, Full time
Past Experience	JMT Coompany of America, 5 years
Education	A&M University, masters degree, computer engineering
Gap Year	Present
Current Job Status	Senior programming expert, JTM Company of America
Self rating	Above Average
EXTERNAL PARAMETERS	
Current economic conditions	
IT sector market analysis	
Lay offs in IT sector	
Mass hiring companies	
Competition faced	
Season of job application	
Demand-supply ratio	
Direction of movement of related organization	
Rarity of skill set	
HISTORICAL PARAMETERS	
Company name	JMT Company of America
Duration	5 years
RECOMMENDATIONS	
Recommender	Mr. J Smith
	Director, JMT Company of America

302

FIG. 3B

INTERNAL PARAMETERS FUNCTION POINTS	
Total weightage : 60%	
Function point	Value
Skill set	15
Past Experience	6
Expected Position	11
Expected Salary	10
Total	42
EXTERNAL PARAMETERS FUNCTION POINTS	
Total weightage : 25%	
Function point	Value
Season of application	12
Rarity of skill set	6
Total	18
HISTORICAL PARAMETERS FUNCTION POINTS	
Total weightage : 5%	
Function point	Value
Trend	3
Total	3
RECOMMENDATIONS FUNCTION POINTS	
Total weightage : 10%	
Function point	Value
Past employer	7
Total	7
Relative score	42+18+3+7 = 70
Absolute score	82
Gross score	76

306

FIG. 3C

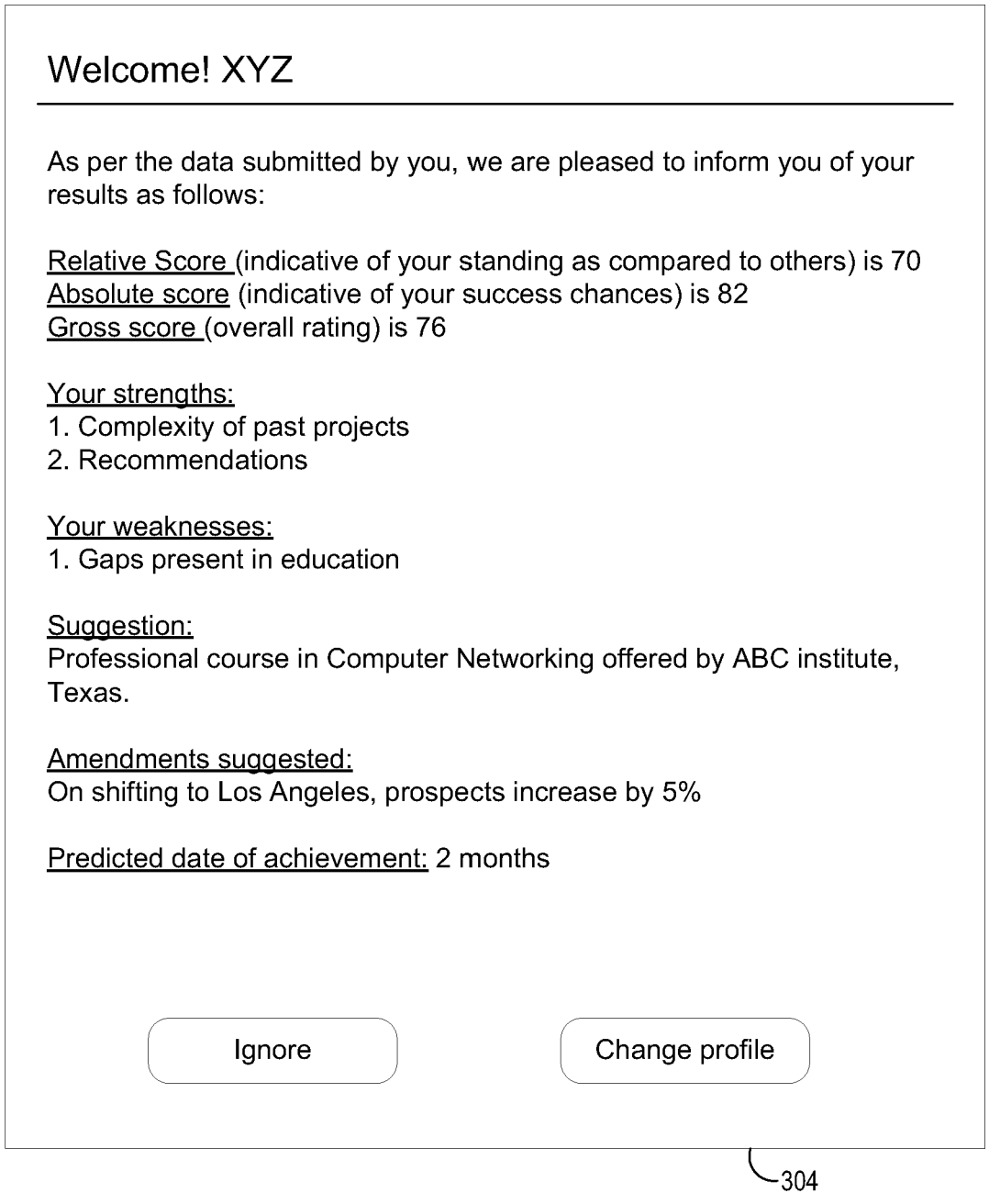
Welcome! XYZ
As per the data submitted by you, we are pleased to inform you of your results as follows:
Relative Score (indicative of your standing as compared to others) is 70
Absolute score (indicative of your success chances) is 82
Gross score (overall rating) is 76
Your strengths:
1. Complexity of past projects
2. Recommendations
Your weaknesses:
1. Gaps present in education
Suggestion:
Professional course in Computer Networking offered by ABC institute, Texas.
Amendments suggested:
On shifting to Los Angeles, prospects increase by 5%
Predicted date of achievement: 2 months
Ignore
Change profile
304

FIG. 3D

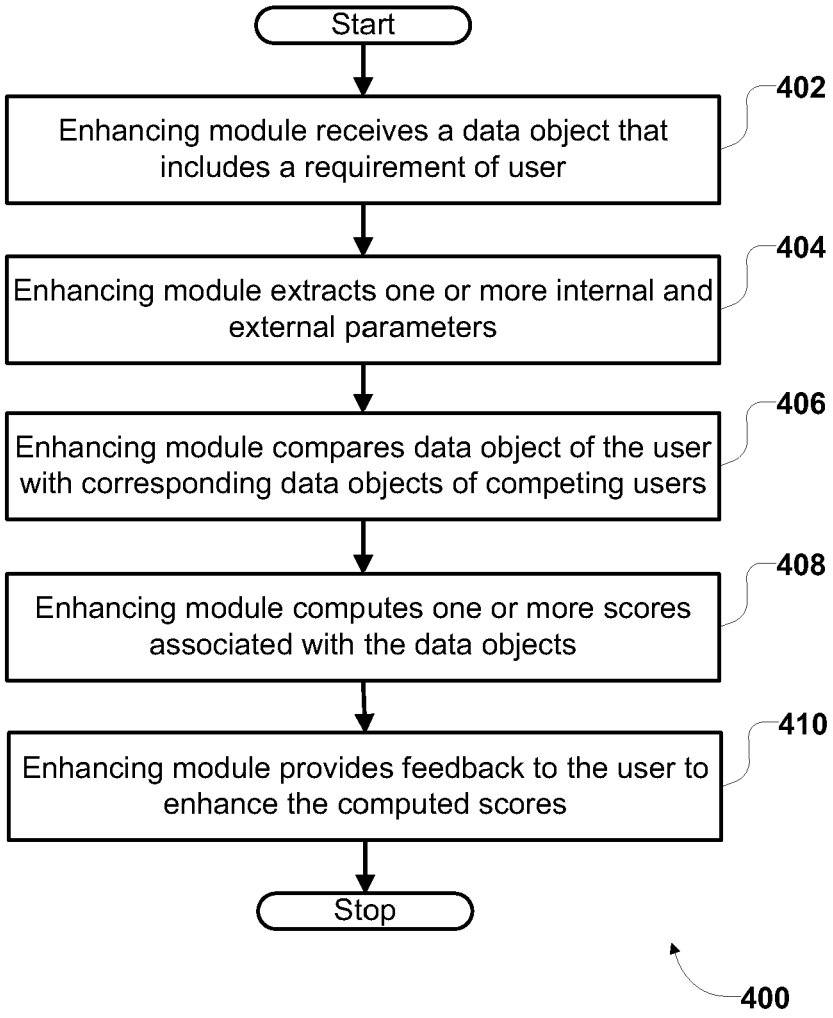
Start
Enhancing module receives a data object that includes a requirement of user
402
Enhancing module extracts one or more internal and external parameters
404
Enhancing module compares data object of the user with corresponding data objects of competing users
406
Enhancing module computes one or more scores associated with the data objects
408
Enhancing module provides feedback to the user to enhance the computed scores
410
Stop
400

FIG. 4

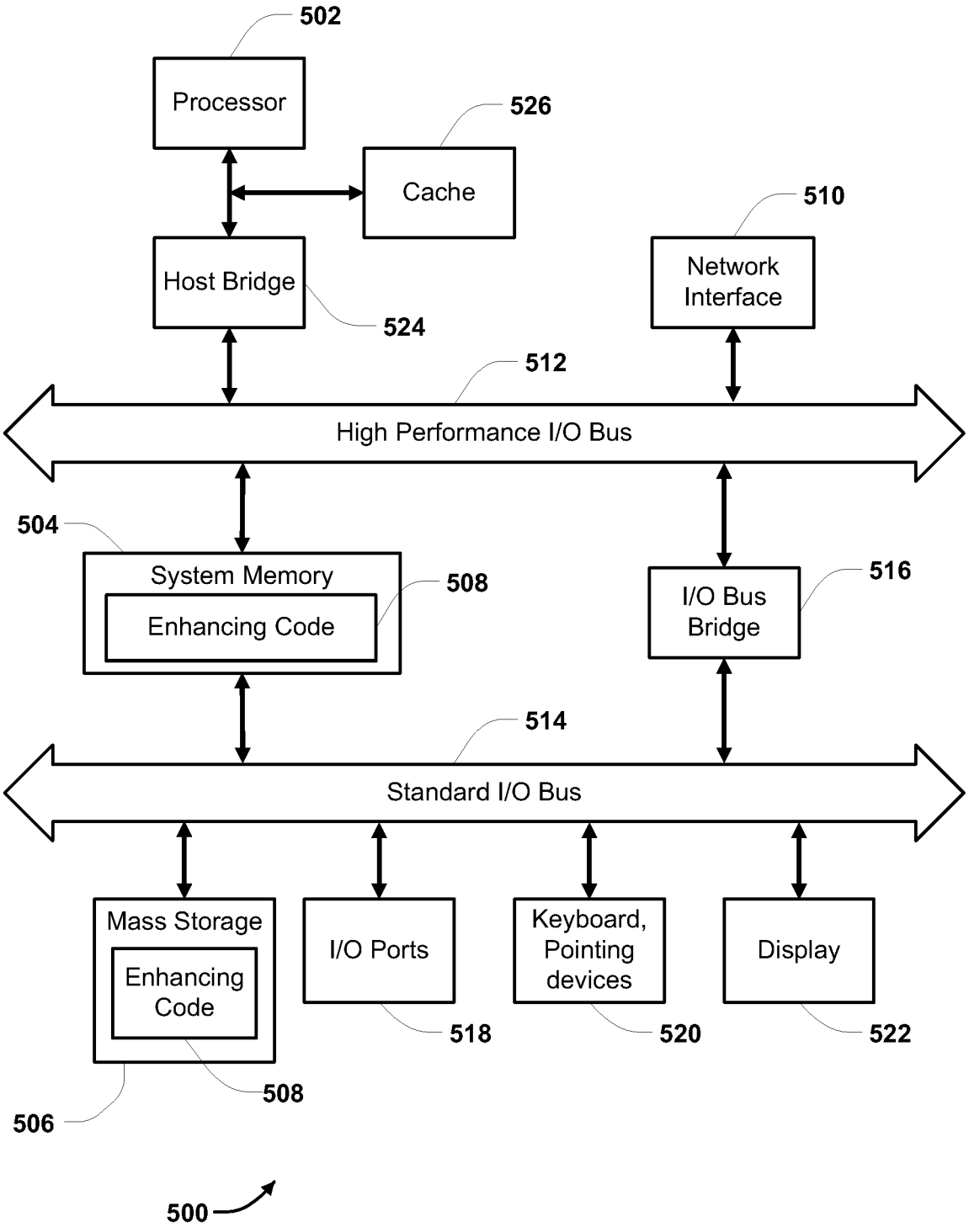
502
Processor
526
Cache
510
Network Interface
Host Bridge
524
512
High Performance I/O Bus
504
System Memory
Enhancing Code
508
I/O Bus Bridge
516
514
Standard I/O Bus
Mass Storage
Enhancing Code
I/O Ports
Keyboard, Pointing devices
Display
518
520
522
508
506
500

FIG. 5

SCORE AND SUGGESTION GENERATION FOR A JOB SEEKER WHERE THE SCORE INCLUDES AN ESTIMATED DURATION UNTIL THE JOB SEEKER RECEIVES A JOB OFFER

CROSS-REFERENCE TO RELATED APPLICATIONS; BENEFIT CLAIM

This application is a Continuation of U.S. patent application Ser. No. 14/688,955, filed Apr. 16, 2015, which is a Continuation of U.S. Pat. No. 9,047,611, issued Jun. 2, 2015; the entire contents of both of which are hereby incorporated by reference for all purposes as if fully set forth herein. The applicants hereby rescind any disclaimer of claim scope in the parent application or the prosecution history thereof and advise the USPTO that the claims in this application may be broader than any claim in the parent application.

TECHNICAL FIELD

The present disclosure generally relates to system and methods for suggesting a way for a user to increase a score associated with a résumé submitted by the user.

BACKGROUND

The advent of the Internet has proved to be a boon to address one or more requirements of a user. Internet provides easy and fast access to meet the needs of a host of requirements that the user may have, like that of booking air tickets and making hotel reservations to a travel destination, buying or selling any consumer product, searching for a suitable life partner, looking for employment, and the like. The user (such as a job seeker) may submit his requirements or attributes by means of one or more data objects that may include his/her requirements pertaining to acquiring a particular service, job and/or desired product. On the other end, a complementary user who provides or offers the services, jobs and/or products to match the one or more requirements of user also submits his requirements in the form of one or more data objects to an intermediate platform.

Known systems may match the requirements of the user with that of the complimentary users either manually or by means of machine learning algorithms. Further, these systems may also allow the user to analyze and select the submitted complementary user's data object that suitably satisfies the user's requirements.

However, if the user's requirements do not match or appropriately correlate to the requirements of the complementary user that is offering the corresponding job, service, and/or product, the user is simply rejected on those grounds. The user may not be informed about the basis of the rejection. Further, in the case of other users who may be competing for the same requirement, the user may not be informed about the cause of the competing users' selection and/or rejection. Thus, the user may lack the information about the various factors that he/she may modify in order to enhance the chances of achieving his or her goals.

SUMMARY

In particular embodiments, the present invention provides methods, systems and computer program products are provided for generating a feasibility score of a job search and for generating a suggestion for enhancing the score. In one method, one or more computing devices receive, over a network, a data object that is associated with a user who is engaged in a search for employment. The data object includes a résumé of the user and a requirement that is associated with the search. The computers calculate, based on the data object, a score that indicates a likelihood of receiving an offer for an employment position that satisfies the requirement. The computers generate a suggestion that identifies how the score may be increased. The computers send the suggestion over the network to a computing device of the user.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. **1** illustrates an example of network environment in which particular implementations of the invention may operate;

FIG. **2** is a block diagram of enhancing module in an example embodiment of the present invention;

FIG. **3**A is an example data object submitted by a user, in an example embodiment of the present invention;

FIG. **3**B illustrates a table that depicts one or more extracted parameters associated with the data object, in an example embodiment of the present invention;

FIG. **3**C illustrates a table that depicts the score computation for the data object, in an example embodiment of the present invention;

FIG. **3**D illustrates a table that depicts a feedback given to the user to enhance one or more computed scores associated with the data object, in an example embodiment of the present invention;

FIG. **4** is a flowchart illustrating an example method for enhancing one or more scores associated with data objects; and

FIG. **5** is a schematic diagram illustrating an example computing system for enhancing one or more scores associated with the data objects according to one embodiment.

DETAILED DESCRIPTION

Example Network Environment

FIG. **1** illustrates a network environment **100** in which particular implementations of the invention may be deployed, according to one embodiment. Network environment **100** includes network-based service provider **102**, one or more other data sources **104**, one or more client nodes **106** and a network **108**. Network-based service provider **102** includes an application server **110**, an enhancing module **112**, and a user information database **114**. Network **108** generally represents one or more interconnected networks, over which network-based service provider **102**, other data sources **104**, and client nodes **106** can communicate with each other. Network **108** may include packet-based wide area networks (such as the Internet), local area networks (LAN), private networks, wireless networks, satellite networks, cellular networks, paging networks, and the like. A person skilled in the art will recognize that network **108** may also be a combination of more than one type of network **108**. For example, network **108** may be a combination of a LAN and the Internet. In addition, network **108** may be implemented as a wired network, or a wireless network or a combination thereof. Client nodes **106** are communicatively coupled to network **108** via network-based service provider **102** or any other suitable methods known in the art.

Client Nodes

Client nodes **106** are computing devices from which a user accesses the services provided by network-based service provider **102**. In one embodiment, the user accessing client nodes **106** may be an individual or an organization. Client nodes **106**

have the capability to communicate over network **108**. Client nodes **106** further have the capability to provide the user an interface to interact with the services provided by network-based service provider **102**. Client nodes **106** may be, for example, a desktop computer, a laptop computer, a mobile phone, a personal digital assistant, and the like. Client nodes **106** may execute one or more client applications such as, without limitation, a web browser to access and view content over a computer network, an email client to send and retrieve emails, an instant messaging client for communicating with other users, and a File Transfer Protocol (FTP) client for file transfer. Client nodes **106**, in various embodiments, may include a Wireless Application Protocol (WAP) browser or other wireless or mobile device protocol suites such as, without limitation, NTT DoCoMo's i-mode wireless network service protocol suites, EDGE, and the like.

Network-Based Service Provider

Network-based service provider **102** is a network addressable system that provides a means to the user to address his requirements that are related to one or more services and/or products. The one or more services and/or products are accessible over network **108** to the user via client nodes **106**. The user may submit his requirements by the means of one or more data objects. The data objects may be one of portable document file, word file, text file, excel file, an online form, an XML file (or other structured document), or a scanned image. Further, the data objects may include one or more requirements and/or information associated with the user. In one embodiment, the user may be required to have an account with network-based service provider **102** in order to submit the data objects. Application server **110** may be responsible for creation and handling of the user account. Application server **110** may include a registration and authentication server (not shown in FIG. **1**) which facilitates the registration of new users, and authenticates existing users at sign-in. Further, the registration and authentication server may use security protocols such as Secure Sockets Layer (SSL), Transport Layer Security (TLS) or GnuTLS.

On registration, application server **110** may ensure that the user account details are stored in user information database **114**. For example, if the user has the requirement of availing of a holiday package to a desired destination, the user may first create an account maintained by network-based service provider **102** and then may lookup the various packages available through the one or more holiday package service provides.

Subsequent to registration, application server **110** may be responsible for invoking enhancing module **112**. Enhancing module **112** may receive the data objects from application server **110**. The data objects may include information associated with one or more requirements of the user and may further include, but not be limited to, attributes and/or criteria associated with the user. Enhancing module **112** may extract one or more parameters based on the information contained in the data objects. Subsequently, enhancing module **112** may compare the information and/or requirements included in one or more data objects of the user with that of competing users. The competing users are selected based at least in part on the similarity of requirements included in the data objects of the user and the data objects of the one or more competing users. In one embodiment, enhancing module **112** may compute one or more scores based at least in part on the computed score and the extracted parameters. In an embodiment, the one or more scores include, but are not limited to, an absolute score and a relative score associated with the data objects. In one embodiment, the relative score may be based on the extracted parameters and the comparison data. Similarly, the absolute score may be based on the availability of the services and/or products corresponding to the requirements of the user, as extracted from the one or more data objects, received from the user. The score may represent a standing or listing to the user which represents a chance the user may have to attain his requirements through network-based service provider **102**. Moreover, in one embodiment, enhancing module **112** may provide feedback to the user to change one or more parameters to enhance his score and thus the stand to attain his/her requirements.

Other Data Sources

Enhancing module **112** may also obtain additional information from other data sources **104**. Other data sources **104** are publicly available sources, or online services, which may store additional information. The additional information may include, without limitation, historical parameters, social parameters, political parameters, socio-political parameters, environmental parameters, locational parameters, economic parameters, skill parameters or any other general, comparative or statistical information such as climatic conditions, consumer demands, and the like that may be directly or indirectly associated with the information contained in the data objects. The additional information may also include, information associated with various organizations and industries, stocks, economy conditions and the like. Example publicly available other data sources **104** include, without limitation, United States Bureau of Labor Statistics, and PayScale Inc. for obtaining statistical data of wages, employee benefits, and employment costs in different geographic regions, different industries and different positions in an industry; educational institution rankings such as those provided by U.S. News and World Report; and top employer rankings such as those provided by Fortune magazine and Forbes magazine. Example online services include social networking websites such as LinkedIn, for obtaining references, special skills, and career objectives of the user (using the user's profile information); and online finance websites such as Yahoo! Finance for obtaining insights on the user's interest in his future professional career and academic pursuits (using page viewing statistics). Further, other data sources **104** may include government websites, meteorological websites, or other information repositories that store publicly available data and may have an impact on the economic, environmental, geographical or political conditions.

Although FIG. **1** illustrates the foregoing systems as separate systems, the functionality represented by each system may be combined into other systems. Furthermore, the functionality represented by each depicted system may be further separated. Still further, implementations of the present invention may operate in network environments that include multiples of one or more of the individual systems and sites disclosed herein. In addition, other implementations may operate in network environments where one or more of the systems described herein have been omitted.

Enhancing Module

FIG. **2** is a simplified block diagram of enhancing module **112** in accordance with one embodiment. As shown in the FIG. **2**, enhancing module **112** may include a receiving module **202**, an extraction module **204**, a rule generator **206**, a comparison module **208**, a computing module **210**, a feedback generator **212** and a knowledge base **214**. Receiving module **202** may receive the one or more data objects from application server **110**. The user may have submitted the data objects with application server **110**, by means of one or more web applications provided by application server **110**. In one embodiment, the user may be an individual, a corporation, organization or any other entity. Further, the data objects may

include one or more requirements. For example, in case of the user being an individual, the requirements of the user may include, but not limited to, to acquire a suitable job position, to buy a consumer product, to buy/sell services and/or products in an online environment and the like. Additionally, in case of the user being an organization, the requirements of the user may include, but not limited to, to acquire a suitable employee as per a vacant job position, provide suitable holiday packages to tourists, sell available products or services to customers, and the like. Hence, the requirements submitted by the user may differ as per the needs and selection criteria of the user. Moreover, the data objects may also include one or more informational attributes associated with the user, such as, but not limited to, social contacts, qualifications, business motive, products information, contact details and the like.

In one embodiment, the data objects may include the requirements of the user to avail of services and/or products. Further, the user may also include one or more conditions, restrictions and/or criteria that the user may impose in order to meet his requirements. For example, if the user intends to go on a holiday to a particular destination and wants to make online hotel reservations for the same, the user requirements may be to reserve an available room that meets certain criteria like booking of a room that has a sea-facing view, certain cost considerations or certain other conditions such as the hotel location and the like.

In one embodiment, the user may upload the data objects through an application provided by network-based service provider **102**. The data objects may be, without limitation, a word processor document, a Portable Document Format (PDF) file, a text file, a Hyper-Text Markup Language (HTML) file, a Tagged Image File Format (TIFF) image or a Portable Network Graphics (PNG) image. Further, the data objects may be, without limitation, an electronic version of the user's résumé, the user's job hiring requirements, the user's desired holiday destinations, the user's personal details for online dating sites, the products and/or services the user desires to purchase or sell, and the like.

In one embodiment, the structure in which the information is contained in the data objects does not adhere to any common format. Moreover, the information contained in the data objects submitted as one or more digital files pertains to the requirements of the user in order to avail of certain services as per the user's need. For example, the user may upload his user profile on an online dating site, stating all his family details, health details, professional details and virtues in order to find a suitable spouse. The information of these data objects may be in any order or format that need not essentially be standardized for all such user profiles.

However, for analyzing the information and/or requirements associated with the user to that of one or more competing users and/or complementary users, the competing users' requirements are of the same nature as that of the user being considered, while the requirements of the complementary users may be complimental to that of the user. Thus, the unstructured format of the information contained in the data objects is required to be converted to a structured format, to retrieve the information and or requirements included in the data objects.

In an embodiment, extraction module **204** extracts the information included in the data objects. In one embodiment, extraction module **204** may employ an electronically executed method, such as, but not limited to, a machine learning algorithm, fuzzy algorithm, neural networks, supervised learning, unsupervised learning, and the like; for converting the unstructured format of the data objects to a structured format and thus extract the information from the data objects. For example, user's information in a résumé may contain applicant experience and education in a chronological order, or reverse chronological order. Additionally, the extraction may also be done manually. Machine learning is a scientific discipline concerned with the design and development of algorithms that allow computers to learn based on data, such as from sensor data or databases.

In another embodiment, the user may provide the information in a web form hosted on application server **110**. The information provided in the web-form may follow a common format. The format of this web-form may vary depending on the requirements of the user. Since, the information is in a structured format, extraction module **204** does not necessarily employ the machine learning algorithm.

In an embodiment, extraction module **204** may extract one or more internal parameters based on the information included in the data objects. In one embodiment, extraction module **204** may employ a suitable machine learning algorithm to extract the internal parameters. In another embodiment, the internal parameters can be extracted manually. The internal parameters are those parameters that are essential to the data object and are derived from the data objects submitted by the user. The internal parameters may be considered as strong points, attributes or assets of the data object that are essential to describe the requirements of the user. Further, internal parameters are those features that can be used to distinguish the information contained in the data object of the user from that of data objects that belong to the same domain but are submitted by the competing users. The internal parameters may either have a positive or negative impact on the requirements of the user stated his data object. For example, in case of the user being an applicant for a job, the user may submit the data object as his/her résumé. In this situation, the internal parameters may include, but not limited to, educational qualification, current job status, past job experience, salary requirement, location preferences, travel willingness or willingness to change location, expected position, reputation of the previous employer and the like. In an embodiment, the positive impact of the internal parameters may be considered if the user has worked with a reputed organization, or is willing to change location, has worked on a combination of technologies and his acquired skills through education and previous job experience is in demand. Further, various paper presentations, awards, or association with recognized councils may also be considered as positive impact. The various internal parameters pertaining to the application for a job are explained in conjunction with FIG. **3**. In one embodiment, the user may submit a new attribute and/or parameter manually and extraction module **204** may use the new added attribute and/or parameter to compute one or more scores associated with the data objects of the user.

In one embodiment, the internal parameters may be updated or refined in a pre-defined period of time. The internal parameters are stored in an internal parameter database **216** of knowledge base **214**. Knowledge base **214** may further include an external parameter database **218** and rule base database **220**. Enhancing module **112** includes a domain analyzer **222** that suitably identifies the domains and sub-domains to which the data objects pertain. Rule generator **206** is used to convert the one or more extracted parameters into suitable rules such that the rules are stored in rule base database **220**. Knowledge base **214** may be implemented using any known database solution such as a Relational Database Management System (RDBMS), an Extensible Markup Language (XML) database, a flat file database, and the like.

In one embodiment, extraction module **204** may also extract one or more external parameters based on the infor-

mation contained in the data object. The external parameters include all those parameters that may directly or indirectly have an impact on the data objects submitted by the user. The external parameters may include, but are not limited to, social parameters, political parameters, socio-political parameters, environmental parameters, locational parameters, economic parameters, statistical comparative parameters, skill parameters, and the like that are relevant to the domain to which the data objects belongs. Further, these external parameters may either enhance or hamper the chances of the requirements of the user being met. In an embodiment, extraction module **204** may extract the external parameters from one or more other data sources **104** like the internet, publicly available data stores, etc. For example, if the user intends to book online tickets for a movie, the rating given to the movie, extracted from public databases like the Internet Movie Database.C-OPYRGT. contribute to the external parameters that impact the user's needs of buying a movie ticket of a movie which has performed well at the box-office. The external parameters are derived from the knowledge domains and sub domains identified by domain analyzer **222**.

In one embodiment, domain analyzer **222** may identify one or more knowledge domains and/or sub domains that the data objects may belong to. The knowledge domains are identified based on the internal parameters of the data objects, extracted by extraction module **204**. The identified knowledge domains may be used to accordingly judge the relevant other data sources **104** that are pertinent to the given data objects. For example, if the user intends to purchase a consumer product, all the entities that offer that consumer product for sale as well as all other users in search of the same consumer product may belong to the same knowledge domain.

Domain analyzer **222** makes use of an electronically executed method to suitably distinguish between the relevant knowledge domains and/or sub domains to those that are irrelevant for the given object. In one embodiment, domain analyzer **222** may also make use of any other method such as machine learning algorithms, fuzzy algorithms, neural networks, and the like. These knowledge domains may include one or more domains and/or sub domains that are distinct or may overlap in terms of one or more parameters. Further, domain analyzer **222** is used, but is not limited, to group the data objects into suitable classes depending on the domains that they belong to. This classification of the data objects into relevant classes is performed by the machine learning algorithm and facilitates in identifying one or more data objects that are related to each other. Thus, the user's data object and the one or more competing users' data objects may be grouped together under the same class based on the similarity of requirements contained in the data objects. This allows the comparison of data objects that are submitted for the same purpose by a plurality of users. Further, both the user's data object and the complementary user's requirement may be categorized under the same class, thereby allowing two or more distinctly comparable data objects to be grouped together. Thus, the data objects that belong to the same class include data objects that have complementary requirements as well as data objects that have the same requirements. For example, the data object of user who uploads his résumé will be grouped in the same class as the organization's data object that states the employer's requirements; as well with the data objects of other users competing for the same job position. Domain analyzer **222** may invoke extraction module **204** to extract the external parameters from other data sources **104** based on the knowledge domains identified. For example, if the user intends to visit a particular tourist location, the user profile and the hotels offering accommodation located near the desired tourist location belong to the same class. The discount offered to the user based on his previous lodging at the same hotel and the current season of travel serve as external parameters to be considered while making the room reservations.

Further, the external parameters also include the statistical comparative analysis of the requirements of other data objects submitted by competing users that pertain to the same domain and/or sub domain of the user. This comparative analysis data may be gathered over time. This extracted comparative analysis data may be used to compare the user's data object with that of one or more competing user data objects.

In one example embodiment, when the user submits one or more data objects to apply for a job, the external parameters may include, but are not limited to, economic factors, socio-political conditions, job conditions in the market, natural or environmental factors, locational advantages, seasonal impact on hiring, competition and the like. The various external parameters pertaining to the application for a job are explained in conjunction with FIG. **3**

Additionally, in an embodiment of the present invention, the historical information pertaining to the same domain as the data objects may also be considered a parameter for the calculation of the one or more scores associated with the data object. In various embodiments of the present invention, this information may be optional. The historical information generally pertains to, but is not limited to, statistically analyzed data that dictates a trend in a particular activity, market or competitive analysis, or past data analysis. Historical information is suitably extracted and stored in external parameter database **218**. For example, for online auctions the past records of the products auctioned and their respective rates, including the buying trends of certain frequent purchasers serve as historical information.

In an embodiment, inputs and/or recommendations provided by the user himself and/or other users may also be considered in the calculation of the one or more scores associated with the data object. In an example embodiment, the user may provide some additional inputs other than the data objects to improve the definition of the data objects. Moreover, the social contacts of the users may also provide recommendation and/or inputs about the user and/or complementary users who may fulfill the requirements of the user. This input and/or recommendations provided are optional and may be subject to user constraints. Further, the input and/or recommendations are stored in external parameter database **218**. For example, in case of a job scenario, the recommendation of a previous employer for the user, previous placement history of the user, user's self rating, and user's input about the complementary user (organization) strength or weakness may also be considered as parameters for the score computation.

In one embodiment, rule generator **206** may convert the extracted internal and external parameters into one or more rules to make suitable inferences on the extracted information through these parameters.

Rule generator **206** is used to generate one or more rules that arise from the dependencies that exist in the parameters that affect the data objects. These one or more dependencies may exist between one or more internal parameters, external parameters, and further optionally between historical parameters and/or recommendations, or any combination thereof. The parameters affecting the data objects are suitably retrieved from the internal parameter database **216** and external parameter database **218** of the knowledge base. Additionally, the inter-relationship or dependencies may be formed relating to the parameters that pertain to a single data object or

a collection of one or more data objects that belong to the same class identified by domain analyzer **222**. In one embodiment, an electronically executed method may be used to derive these sets of rules, by taking into consideration the relationships that may arise, both directly and indirectly, from the parameters that may affect the data object or group of data objects that pertain to the same class or both. These rules may be generated by the mapping of the extracted parameters, which includes internal and external parameters, and inferred dependencies that are stored in rule base database **220** of knowledge base **214**.

In one embodiment, the rules may be generated manually by a system administrator and stored in rule base database **220**.

In one embodiment, comparison module **208** may compare the one or more data objects of the user with that of the competing users for the same requirements. In one embodiment, the data objects are compared based on the information extracted from one or more internal and external parameters. The comparison of these data objects may take place, but not limited to, by comparing the one or more data objects that belong to the same domain and/or sub domain identified by domain analyzer **222**.

In one embodiment, computing module **210** may compute the one or more scores based at least on one of the comparison data received from comparison module **208** and/or from the information extracted from the one or more internal parameters, external parameters, optionally including historical parameters and/or recommendations. Computing module **210** may retrieve the rules generated and stored in rule base database **220** to compute an absolute score and a relative score. Further, the extracted parameters may be retrieved from the internal parameter database **216**, external parameter database **218**, or any combination thereof.

In one embodiment, the relative score associated with the data objects is calculated based on the internal parameters, external parameters, and the comparison data received from comparison module **208**. Thus, the relative score of data objects may provide the standing of the data objects submitted by the user to that of other data objects submitted by competing users that belong to the same class as that of the user's data object. The relative score may thus be used to compare the user's data object with that of competing user's data objects. Thus, relative score associated with the user's data object is indicative of the likelihood of achieving the requirement included in the data object of the user. For example, if the user's data object has a score of 75, while that of his competitor is 80, then the user has lesser chances of fulfilling his requirement as compared to his competitor.

In one embodiment, the absolute score may be the measure of the degree by which two comparable data objects, namely the user requirement with the available service and/or product corresponding to the user requirement, are similar. The absolute score is calculated based at least in part on a comparison between the requirements included in the data objects of the user and the complimental requirements included in the data objects of the complimentary users. Moreover, in one embodiment, absolute score may be calculated based on, but not limited to, the extracted parameters that may belong to a group of one or more data objects that may belong to the same class. Hence, the absolute score of the data object may provide the measure of how closely the user's requirements may be matched to the corresponding complementary requirements of another user (who provide the service and/or product to match the user requirement). In other words, the absolute score provides an indication of a likelihood of how the user fares against the complimentary requirements.

In one embodiment, the one or more scores associated with the data object may have a numerical value or may be expressed as a percentage. Further, the scores may also be expressed as a percentile. Additionally, the scores may lie within a pre-defined range such that the user's scores associated with the data object may be accordingly categorized as a good score, average score or poor score. Further, the user may also be notified about his rank that is suggested by how high his scores are as compared to that of other users. For example, for a score range of 300 points to 900 points, a user's data object having a score of 850 points is considered to be a good score.

In one embodiment, computing module **210** may determine the function points and suitably assign weighting to the extracted parameters that include but is not limited to, the external parameters, internal parameters, optionally including historical parameters and/or recommendations, or any combination thereof. These function points are those extracted parameters, that include internal parameters, external parameters, historical parameters, recommendations, or combination thereof, that may be required in computing the one or more scores assigned to the data objects. In one embodiment, the function points may be determined by the user. In another embodiment, computing module **210** automatically determines the function points. In one embodiment, computing module **210** may employ an electronically executed method and/or manually identify the function points that may impact the computation of the one or more scores. The weighting of the extracted parameters may determine the amount of weight or influence given to the extracted parameters. In one embodiment, the weighting may differ for the contribution of the same extracted parameters in the calculation of the absolute score and the relative score. Additionally the weighting may be given in terms of an absolute value, residing within a pre-defined range, or by a percentage value. Thus, the computing module **210** may assign a value to the internal parameters, external parameters, historical parameters, recommendations, or all, that belong to an individual data object or a group of data objects.

Additionally, the values may be numerical values, lying within a predefined range or a percentage or a percentile value. The one or more scores are calculated dynamically and may change under certain conditions. These conditions include change in the external parameters due to reasons outside the user's scope, change in the weighting given to the parameters, change in the internal parameters within the user's scope, which may arise due to the feedback given by feedback generator **212** in order to improve the one or more scores computed, change in the recommendation provided by other users, etc. For example, in the case of job hiring, the employee may decide on designating a weight of 60 for the internal parameters and 40 for the external parameters. Further, the weight may also be provided to the historical factors and one or more inputs/recommendations provided by other users.

In one embodiment, computing module **210** may calculate a gross score which may be the summation of the average of the absolute score and the relative score.

In one embodiment, feedback generator **212** may analyze the one or more scores computed by computing module **210** and provide a listing of the internal parameters, external parameters, optionally including historical parameters, recommendations, or all, that need to be modified, improved, added or removed, in order to improve the one or more scores associated with the data object. For example, in the case when the user desires to secure a particular job position, the feed-

back generator may inform the user that on acquiring a particular skill set, the user may improve the chance of acquiring his desired post.

Feedback generator **212** may access the one or more scores computed by computing module **210** to suitably analyze the impact of the various parameters on the scores associated with the data object. Further, feedback generator **212** may access internal parameter database **216**, external parameter database **218** and rule base database **220** to determine how the scores may be improved by analyzing the dependencies that exist amongst one or more internal parameters, external parameters, optionally including historical parameters, recommendations, or any combination thereof. An electronically executed method such as, but not limited to, a machine learning algorithm, fuzzy algorithms, neural networks, supervised learning, unsupervised learning, and the like; may be used to analyze these inter-relationships amongst parameters pertaining to the same data object, or the dependencies that arise due to the comparison between two or more distinct data objects that belong to the same class.

Further, feedback generator **212** also considers the weighting assigned to the various parameters, in order to determine the changes that need to be made to one or more parameters to improve the user's chances of fulfilling his requirement as compared to that of other users that have the same requirement. Improvement of the relative score may allow the user to increase his overall user profile standing by increasing the chances of the user of fulfilling his requirement as compared to that of the competing users. For example, the user may be informed that on completing a particular course of study, his relative score may increase from 75 to 82, thereby increasing his chances of acquiring a suitable job, as compared to that of the competing user's data object which may have a relative score of 80.

Additionally, enhancing the absolute score computed for the data objects provides a means to the user to increase his likelihood of matching his requirements to the corresponding requirements of the complementary user. Feedback generator **212** may provide an option to change on or more parameters included in the data object of the user to enhance the absolute score and thus the likelihood of user fairing against the requirements included in the data object of the complimentary users. For example, improving the absolute score of the user desiring a particular job position from 60 to 80 will increase his chances of meeting his needs based on the available jobs pertaining to his requirements.

Further, feedback generator **212** may provide the listing of all parameters that may be responsible for affecting the one or more scores of the data objects. The parameters may contribute to the score calculation by either enhancing or hampering the user's chances of fulfilling his requirement. Further, the user may be given the option to modify and/or remove one or more of the listed parameters and weighting associated with the same. Additionally, one or more new parameters and related weighting may also be added by the user manually.

Additionally, in an embodiment, feedback generator **212** may also suggest the best match to the user's requirement, by judging the minimum modifications that need to be made in order to achieve the best match judged by a high absolute score, made to compare one or more distinctly comparable data objects that lie in the same domain. For example, the user may be informed that with his cost considerations, he will be able to go for a ten day vacation as per his requirement to San Jose instead of Los Angeles.

Further, the feedback generated by feedback generator **212** may provide a listing and/or grouping of the various available options with respect to the services and/or products desired by the user, such that the listing provided is in descending order of degree by which the available options may fit the requirements of the user.

Further, as per an embodiment, the user may be informed that on making the suitable improvements in the submitted data object, the user would be able to satisfy his requirements service within a specified duration. For example, the user may be informed that on acquiring a particular skill set, it is estimated that he will be hired to his desired job position within a period of two months.

Further, as per an embodiment, the feedback provides an option to the user to incorporate the one or more changes, which may include suggestions to include certain internal parameters, remove certain internal parameters and/or modify certain internal parameters of the data object submitted by the user in order to improve the one or more computed scores. In one embodiment, feedback generator **212** may itself compute all the probable scores by automatically changing the various parameters.

In another embodiment, feedback generator **212** may receive the modified data objects from the user and re-compute the score associated with the data objects based on one or more changes in the internal parameters, or change of value assigned to the parameters. The change of the parameter may be due to user amendment, change in the external parameters, change of weighting given to the parameters considered as function points, etc.

FIG. **3**A illustrates an exemplary data object **300** submitted by the user. In an example embodiment of the present invention, data object **300** is a digital file that contains the user's requirements. In the example embodiment, the user is an individual, who has submitted data object **300** for a suitable job position. Data object **300** states the one or more requirements of the user. Moreover, the one or more restrictions provided by the user include certain preferred companies, expected position, salary considerations, location considerations and mode (full time or part time). These restrictions may act as conditions imposed by the user in order to meet his requirements. Data object **300** also contains the user's personal details, contact details, educational qualifications, skill set, additional professional courses, work experience and current job status. This information contained in data object **300** distinguishes the user from other competing users. Thus, this information includes the attributes possessed by the user which may either have a positive or negative impact on the requirement of the user. The combination of technological skills and his past experience in the same field prove to be one or more assets for an expected position the user wishes to acquire. Further, the reputation of the user's previous employer may also increase his chances of acquiring his requirements. Data object **300** also includes the past employer's recommendation and a disclosure by the user stating his self rating. The recommendation provided by the past employer may assist in providing a sense of the capabilities of the user.

In an embodiment of the present invention, extraction module **204** may employ an electronically executed method to scan and extract one or more parameters from data object **300** submitted by the user.

FIG. **3**B illustrates a table **302** that includes the extracted parameters associated with data object **300**. Extraction module **204** may extract the one or more internal parameters from data object **300** submitted by the user. In this example embodiment, the internal parameters may include user's requirement of acquiring a job, the one or more user's conditions/restrictions, user's salary requirements, job location, travel willingness, past experience, educational qualification,

any gaps in career, current job status, expected position and self rating. These internal parameters are stored in internal parameter database **216** of knowledge base **214**. These internal parameters may either have a positive or a negative impact on the job acquiring chances of the user. Further, these internal parameters are subject to modification by the user at a later stage, since the internal parameters are subject to the user's considerations. Further, domain analyzer **222** may analyze data object **300** and ascertain the domains to which data object **300** belongs to. In this example embodiment, data object **300** belongs to the job acquiring domain in the information technology sector. Based on this ascertained domain, extraction module **204** may search other data sources **104**, which in this case may include company websites, and other online services related to market analysis, current economic condition and job acquiring trends pertaining to the individual's desired sector. Further, other statistical data related to the lay offs in the given sector, direction of movement of related organizations in recent times, competition in terms of demand-supply ratio, mass hiring done by companies in the related sector may also be extracted from the relevant other data sources **104**. Further, the impact of the season of applying may also be considered. Also, the rarity of the skill set possessed by the user in terms of the current jobs in demand also serves as a suitable parameter which may assist in job acquisition. Accordingly, extraction module **204** may extract one or more relevant external parameters from these identified other data sources **104** and store these parameters in external parameters database **218**. Further, the historical information related to the trend in the user's field of expertise is also extracted and stored in external factor database **218**. Moreover, the recommendations provided by the user's past employers are also extracted and stored in external factor database **218**.

FIG. **3**C illustrates a table **304**, which depicts the score computation of data object **300** submitted by the user. Rule generator **206** may retrieve the internal parameters, external parameters, the historical parameters and the recommendations stored in knowledge base **214**. Further, in an embodiment of the present invention, comparison module **208** may compare data object **300** of the user with that of the competing users' based on the one or more extracted parameters. Comparison module **208** may use an electronically executed method to generate dependencies that map the one or more extracted parameters with each other, and thus forms one or more relationships amongst the extracted parameters. Further, computing module **210** may compute a relative score associated with data object **300** of the user. The relative score may be based on one or more extracted parameters associated with data object **300** and the comparison data received from comparison module **208**. The relative score may be computed based on function points, which are defined based on the one or more extracted parameters and data objects of the competing users. These function points may contribute to the relative score calculation as per the weighting assigned to them. In the example embodiment, the internal parameters are given a weighting of 60%, external parameters are given a weighting of 25%, historical parameters are given a weighting of 5% and recommendations are given a weighting of 10%. The weighting of the function points assigned to the one or more internal parameters are: skill set—15 points, past experience—6 points, expected position—11 points, expected salary—10 points. Further, the weighting of the function points assigned to the one or more external parameters are: season of applying—12 points and rarity of skill set—6 points. Further, the weighting of the function points for historical parameters is 3 points and for the user's past employer's recommendations is 7 points. Thus, the relative score assigned to data object **300** of the user may have a score of 70, which is computed by the summation of the values assigned to these parameters. A person ordinarily skilled in the art may recognize that the numerical values provided in this example embodiment are merely for an example basis and do not limit the scope of the invention.

Further, rule generator **206** may generate one or more rules to link data object **300** of the user with that of the one or more organizations that may fulfill the user requirement of attaining a job position. Computing module **210** may compute an absolute score based on the degree to which the user's job requirement may match the needs of the organization offering that job. In an embodiment of the present invention, the computation of the absolute score also includes assigning function points with suitable weighting. In this case rule generator **206** generates rules that match the skill set required by the organization with the skill set of the user, the minimum qualifications required by the organization with that of the user, the competitor organizations and their hiring trends and the user's past experience. Based on the above factors, in this example embodiment, the user's data object **300** may be assigned an absolute score of 82, which indicates the availability of the user's job requiring needs being met. Further, the gross score computed is based on the average of the relative and absolute score computed. In the example embodiment, the gross score may be calculated as a value 76.

FIG. **3**D illustrates a table **306** that depicts the feedback given to the user to enhance the one or more computed scores associated with data object **300**. Feedback generator **212** may utilize the one or more computed scores and the one or more rules stored in rule base database **220** to provide an option of changing one or more internal parameters and thus may allow the user to improve his relative score. For example, the feedback may include one or more suggestions such as, but not limited to, that the user may do additional professional courses in computer networking from the reputed institute ABC based on the fact that the competing user has done the same. Moreover, the feedback may also include suggestions such as, but not limited to, that if the user changes his residence to Los Angeles, his chances of acquiring his desired job will increase by 5%. Further, the feedback may also indicate that the user has a probability of achieving his desired job requirement in two months if the suitable amendments are made. The feedback may also indicate that the complexity of his past projects and recommendations provided by his previous employer may assist him to achieve his job requirement. In an embodiment of the present invention, if the user performs one or more changes in data object **300** as per the suggestions provided by feedback generator **212**, then computing module **210** may re-compute the new relative and absolute score for the user.

Process

FIG. **4** is a flowchart illustrating an example process for enhancing one or more computed scores associated with the data object.

At step **402**, receiving module **202** may receive the one or more data objects from application server **110**. In an embodiment of the present invention, a user may have submitted the data objects with application server **110**, by means of one or more web applications provided by application server **110**. In one embodiment, the user may either be, but not limited to, an individual or an organization. Further, the data objects may include one or more requirements. For example, in case of the user being an individual, the requirements of the user may include, but not limited to, to acquire a suitable job position, to buy any consumer product, to buy/sell services and/or

products in an online environment and the like. Additionally, in case of the user being an organization, the requirements of the user may include, but not limited to, to acquire a suitable employee as per the vacant job position, provide suitable holiday packages to tourists, sell available products or services to customers, and the like. Moreover, the data objects may also include one or more informational attributes associated with the user, such as, but not limited to, social contacts, qualifications, business motive, products information, contact details and the like. The data object may be, without limitation, a word processor document, a Portable Document Format (PDF) file, a text file, a Hyper-Text Markup Language (HTML) file, a Tagged Image File Format (TIFF) image or a Portable Network Graphics (PNG) image.

At step **404**, extraction module **204** extracts the information included in the data objects. In one embodiment, extraction module **204** may employ manual methods and/or electronically executed methods such as, but not limited to, machine learning algorithms, neural networks, supervised learning, unsupervised learning, and the like; for converting the unstructured format of the data objects to a structured format and thus extract the information from the data objects. Machine learning is a scientific discipline concerned with the design and development of algorithms that allow computers to learn based on data, such as from sensor data or databases.

In an embodiment, extraction module **204** may extract one or more internal parameters based on the information included in the data objects. In one embodiment, extraction module **204** may employ electronically executed methods to extract the internal parameters. In another embodiment, the internal parameters can be extracted manually. The internal parameters are those parameters that are essential to the data object and are derived from the data objects submitted by the user. The internal parameters are stored in an internal parameter database **216** of knowledge base **214**. Enhancing module **112** may also include a domain analyzer **222** that suitably identifies the domains and sub-domains that the data objects pertain to. Further, rule generator **206** may be used to convert the one or more extracted parameters into suitable rules such that the rules are stored in rule base database **220**.

In one embodiment, extraction module **112** may also extract one or more external parameters based on the information contained in the data object. External parameters include all those parameters that may directly or indirectly have an impact on the data objects submitted by the user. External parameters may include, but not limited to, social parameters, political parameters, socio-political parameters, environmental parameters, locational parameters, economic parameters, statistical comparative parameters, skill parameters, and the like that are relevant to the domain that the data objects belongs to.

Further, the external parameters also include the statistical comparative analysis of the requirements of other data objects submitted by competing users that pertain to the same domain and/or sub domain of the user. This comparative analysis data may be gathered over time. This comparative analysis data extracted may be used, but not limited to, compare the user's data object with that of one or more competing user data objects.

Additionally, in an embodiment of the present invention, the historical information pertaining to the same domain as the data object may also be considered as a parameter for the calculation of the one or more scores associated with the data object. In an embodiment, inputs and/or recommendations provided by the user himself and/or other users may also be considered in the calculation of the one or more scores associated with the data object.

In one embodiment, rule generator **206** may convert the extracted internal and external parameters into one or more rules to make suitable inferences on the extracted information through these parameters.

Rule generator **206** is used to generate one or more rules that arise from the dependencies that exist in the parameters that affect the data objects. These one or more dependencies may exist between one or more internal parameters, external parameters, and further optionally between historical parameters and/or recommendations, or any combination thereof. The parameters affecting the data objects are suitably retrieved from the internal parameter database **216** and external parameter database **218** of the knowledge base. Additionally, the inter-relationship or dependencies may be formed relating to the parameters that pertain to a single data object or a collection of one or more data objects that belong to the same class identified by domain analyzer **222**. In one embodiment, an electronically executed method and/or manual method may be used to derive these sets of rules, by taking into consideration the relationships that may arise, both directly and indirectly, from the parameters that may affect the data object or group of data objects that pertain to the same class or both. These rules may be generated by the mapping of the extracted parameters, which includes internal and external parameters, and inferred dependencies that are stored in rule base database **220** of knowledge base **214**.

At step **406**, comparison module **208** may compare the one or more data objects of the user with that of the competing users for the same requirements. In one embodiment, the data objects are compared based on the information extracted from one or more internal and external parameters. The comparison of these data objects may take place, but not limited to, by comparing the one or more data objects that belong to the same domain and/or sub domain identified by domain analyzer **222**.

At step **408**, computing module **210** may compute the one or more scores based at least on one of the comparison data received from comparison module **208** and/or from the information extracted from the one or more internal parameters, external parameters, optionally including historical parameters and/or recommendations. Computing module **210** may retrieve the rules generated and stored in rule base database **220** to compute, but not limited to, an absolute score and a relative score. These rules may either be generated by rule generator **206** or stored manually by system administrator. Further, the extracted parameters may be retrieved from the internal parameter database **216**, external parameter database **218** or any combination thereof

In one embodiment, the relative score associated with the data objects is calculated based on, but not limited to, the internal parameters, external parameters, and the comparison data received from comparison module **208**. Thus, the relative score of data objects may provide the standing of the data objects submitted by the user to that of other data objects submitted by competing users that belong to the same class as that of the user's data object.

In one embodiment, the absolute score may be the measure of the degree by which two comparable data objects, namely the user requirement with the available service and/or product corresponding to the user requirement, are similar. The absolute score is calculated based at least in part on a comparison between the requirements included in the data objects of the user and the complimental requirements included in the data objects of the complimentary users. Moreover, in one embodiment, absolute score may be calculated based on, but not limited to, the extracted parameters that may belong to a group of one or more data objects that may belong to the same

class. Hence, the absolute score of the data object may provide the measure of how closely the user's requirements may be matched to the corresponding complementary requirements of another user (who provide the service and/or product to match the user requirement). In other words, the absolute score provides an indication of a likelihood of how the user fares against the complimentary requirements.

In one embodiment, computing module **210** may calculate a gross score which may be the summation of the average of the absolute score and the relative score.

At step **410**, feedback generator **212** may analyze the one or more scores computed by computing module **210** and provides a listing of the internal parameters, external parameters, optionally including historical parameters, recommendations, or all, that need to be modified, improved, added or removed, in order to enhance the one or more scores associated with the data object.

In an embodiment of the present invention, if the user modifies the one or more data objects, based on the suggestions from feedback generator **212**, then the computing module **210** may re-compute the one or more scores associated with the one or more data objects.

Enhancing Score System Architecture

FIG. **5** illustrates an example hardware system **500** to implement score enhancing system **112** according to one embodiment. Hardware system **500** includes at least one processor **502**, a system memory **504**, and mass storage **506**. The system memory **504** has stored therein one or more application software, enhancing code **508** for implementing score enhancing system **112**, an operating system and drivers directed to the functions described herein. Mass storage **506** provides permanent storage for the data and enhancing code **508** for score enhancing system **112**, whereas system memory **504** (e.g., DRAM) provides temporary storage for the data and programming instructions when executed by processor **502**. The process flow of the enhancing code **508** for score enhancing system **112** is described in detail in conjunction with FIG. **4**. In one embodiment, knowledge base **114** may reside in mass storage **506**. A network/communication interface **510** provides communication between hardware system **500** and any of a wide range of networks, such as an Ethernet (e.g., IEEE 802.3) network, etc. Additionally, hardware system **500** includes a high performance input/output (I/O) bus **512** and a standard I/O bus **514**. System memory **504** and network/communication interface **510** are coupled to bus **512**. Mass storage **506** is coupled to bus **514**. I/O Bus Bridge **516** couples the two buses **512** and **514** to each other.

In one embodiment, process **400** described herein is implemented as a series of software routines run by hardware system **500**. These software routines comprise a plurality or series of instructions to be executed by a processor in a hardware system, such as processor **502**. Initially, the series of instructions are stored on a storage device, such as mass storage **506**. However, the series of instructions can be stored on any suitable storage medium, such as a diskette, CD-ROM, ROM, EEPROM, DVD, Blu-ray disk, etc. Furthermore, the series of instructions need not be stored locally, and could be received from a remote storage device, such as server on a network, via network/communication interface **510**. The instructions are copied from the storage device, such as mass storage **506**, into system memory **504** and then accessed and executed by processor **502**.

In one embodiment, hardware system **500** may also include I/O ports **518**, a keyboard and pointing device **520**, a display **522** coupled to bus **512**. I/O ports **518** are one or more serial and/or parallel communication ports that provide communication between additional peripheral devices, which may be coupled to hardware system **500**. A host bridge **524** couples processor **502** to high performance I/O interface **510**. Hardware system **500** may further include video memory (not shown) and a display device coupled to the video memory. Collectively, these elements are intended to represent a broad category of computer hardware systems, including but not limited to general purpose computer systems based on the x86-compatible processors manufactured by Intel Corporation of Santa Clara, Calif., and the x86-compatible processors manufactured by Advanced Micro Devices (AMD), Inc., of Sunnyvale, Calif., as well as any other suitable processor.

Hardware system **500** may include a variety of system architectures; and various components of hardware system **500** may be rearranged. For example, cache **526** may be on-chip with processor **502**. Alternatively, cache **526** and processor **502** may be packed together as a "processor module," with processor **502** being referred to as the "processor core." Furthermore, certain embodiments of the present invention may not require nor include all of the above components. For example, the peripheral devices shown coupled to standard I/O bus **512** may couple to high performance I/O interface **510**. In addition, in some embodiments only a single bus may exist with the components of hardware system **500** being coupled to the single bus. Furthermore, hardware system **500** may include additional components, such as additional processors, storage devices, or memories.

An operating system manages and controls the operation of hardware system **500**, including the input and output of data to and from software applications (not shown). The operating system provides an interface between the software applications being executed on the system and the hardware components of the system. According to one embodiment of the present invention, the operating system is the LINUX operating system. However, the present invention may be used with other suitable operating systems, such as the Windows 95/98/NT/XP/Server operating system, available from Microsoft Corporation of Redmond, Wash., the Apple Macintosh Operating System, available from Apple Computer Int. of Cupertino, Calif., UNIX operating systems, and the like.

The present invention has been explained with reference to specific embodiments. For example, while embodiments of the present invention have been described with reference to specific hardware and software components, those skilled in the art will appreciate that different combinations of hardware and/or software components may also be used, and that particular operations described as being implemented in hardware might also be implemented in software or vice versa. Other embodiments will be evident to those of ordinary skill in the art. It is therefore not intended that the present invention be limited, except as indicated by the appended claims.

What is claimed is:

1. A method comprising:

receiving, over a network, a data object that is associated with a user who is engaged in a search for employment, wherein the data object includes a résumé of the user and a requirement that is associated with the search;

calculating, based on the data object, a score that indicates a likelihood of receiving an offer for an employment position that satisfies the requirement, wherein the score includes an estimated duration until the user receives the offer;

generating a suggestion that identifies how the score may be increased; and

sending the suggestion over the network to a computing device of the user;

wherein the method is performed by one or more computing devices.

2. The method of claim 1, further comprising sending the score over the network to the computing device.

3. The method of claim 2 wherein the suggestion includes an estimated reduction of the estimated duration if the suggestion is fulfilled.

4. The method of claim 1 wherein the suggestion includes an estimated increase of the score if the suggestion is fulfilled.

5. The method of claim 1, further comprising comparing the data object with a second data object of a second user, wherein the suggestion identifies a modification that, if made, would result in a higher score than a score of the second user.

6. The method of claim 1 wherein the suggestion comprises an attribute of a second user.

7. The method of claim 6 wherein the attribute of the second user comprises an identification of a professional improvement course that the second user has taken.

8. The method of claim 1 wherein the suggestion identifies a professional improvement course.

9. The method of claim 1 wherein calculating or generating is based on data obtained from a user profile of a social networking website.

10. The method of claim 9 wherein the data obtained comprises at least one of:

a professional reference, a skill, or a career objective.

11. The method of claim 1, wherein calculating or generating comprises calculating or generating based on an amount of page views of a webpage.

12. The method of claim 1 wherein:

the requirement comprises a locale and a desired employment position; and

calculating or generating comprises calculating or generating based on employment market conditions in the locale of the desired employment position.

13. The method of claim 12 wherein:

the requirement comprises a desired locale that indicates where the user desires to work;

the suggestion identifies an alternate locale for the desired employment position, wherein the alternate locale is different than the desired locale.

14. The method of claim 1 wherein the suggestion identifies a skill.

15. The method of claim 1 wherein calculating or generating comprises calculating or generating based on a ranking of an academic institution.

16. The method of claim 1 wherein calculating or generating comprises calculating or generating based on a self-rating by the user.

17. The method of claim 1 wherein:

the résumé comprises a plurality of parameters; and

the method further comprises determining a parameter score for each of the plurality of parameters;

the parameter score is based on a respective parameter weight;

wherein calculating comprises calculating based on the parameter score of each of the plurality of parameters.

18. The method of claim 1 wherein the requirement comprises at least one of: one or more preferred employers, a salary range, or an amount of work hours desired.

19. A system comprising:

one or more processors;

one or more storage media storing instructions which, when executed by the one or more processors, cause:

receiving, over a network, a data object that is associated with a user who is engaged in a search for employment, wherein the data object includes a résumé of the user and a requirement that is associated with the search;

calculating, based on the data object, a score that indicates a likelihood of receiving an offer for an employment position that satisfies the requirement, wherein the score includes an estimated duration until the user receives the offer;

generating a suggestion that identifies how the score may be increased; and

sending the suggestion over the network to a computing device of the user.

20. One or more computer readable media comprising instructions that, when executed by one or more processors, cause:

receiving, over a network, a data object that is associated with a user who is engaged in a search for employment, wherein the data object includes a résumé of the user and a requirement that is associated with the search;

calculating, based on the data object, a score that indicates a likelihood of receiving an offer for an employment position that satisfies the requirement, wherein the score includes an estimated duration until the user receives the offer;

generating a suggestion that identifies how the score may be increased; and

sending the suggestion over the network to a computing device of the user.

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